

REMARKS

Applicants wish to thank Examiner Sellmann for allowing Claims 13-15.

The Examiner has not stated in the Office Action whether she now is using the complete translation of the references used for the rejections. The Examiner is requested to state on the record that the references used for the rejections have been considered in their entirety. In addition, the Examiner is requested to provide a translation of the references used. In this context, Applicants wish to draw the Examiners' attention to MPEP 706.02.II.

"Citation of and reliance upon an abstract without citation of and reliance upon the underlying scientific document is generally inappropriate where both the abstract and the underlying document are prior art. See *Ex parte Jones*, 62 USPQ2d 1206, 1208 (Bd. Pat. App. & Inter. 2001) (unpublished). To determine whether both the abstract and the underlying document are prior art, a copy of the underlying document must be obtained and analyzed. If the document is in a language other than English and the examiner seeks to rely on that document, a translation must be obtained so that the record is clear as to the precise facts the examiner is relying upon in support of the rejection. The record must also be clear as to whether the examiner is relying upon the abstract or the full text document to support a rejection."

The present invention as set forth in **Claim 7** relates to relates to a mixture, comprising at least one radiation-curable composition (I) and at least one pressure-sensitive adhesive (II);

wherein said mixture does not comprise an adhesive which requires an additional compound as a curing agent;

wherein the adhesive (II) comprises an adhesive composition crosslinkable by active radiant energy;

wherein the radiation-curable composition (I) comprises
(A) at least one polymerizable compound comprising two or more copolymerizable, ethylenically unsaturated groups,

- (B) optionally, reactive diluents,
- (C) optionally, photoinitiator, and
- (D) optionally at least one coating additive.

Claim 13 relates to a method of coating a substrate, comprising:

coating a substrate with a coating material comprising a mixture, thereby obtaining a coated substrate;
thermally treating said coated substrate, and
curing said coating material with active radiant energy;
wherein said mixture comprises at least one radiation-curable composition (I) and at least one pressure-sensitive adhesive (II);
wherein said mixture does not comprise an adhesive which requires an additional compound as a curing agent.

Claim 17 relates to a method of coating a substrate, comprising:

coating a substrate with a coating material comprising a mixture, thereby obtaining a coated substrate;
wherein said substrate is plastic, glass or metal;
wherein said mixture comprises at least one radiation-curable composition (I) and at least one pressure-sensitive adhesive (II);
wherein said mixture does not comprise an adhesive which requires an additional compound as a curing agent;
wherein the adhesive (II) comprises an adhesive composition crosslinkable by active radiant energy;
wherein the radiation-curable composition (I) comprises

- (A) at least one polymerizable compound comprising two or more copolymerizable, ethylenically unsaturated groups,
- (B) optionally, reactive diluents,
- (C) optionally, photoinitiator, and
- (D) optionally at least one coating additive.

Claim 18 relates to a method of coating a substrate, comprising:

coating a substrate with a coating material comprising a mixture, thereby obtaining a coated substrate;

wherein said substrate is metal foil, plastic film or a composite of metal foil and plastic film;

wherein said mixture comprises at least one radiation-curable composition (I) and at least one pressure-sensitive adhesive (II);

wherein said mixture does not comprise an adhesive which requires an additional compound as a curing agent;

wherein the adhesive (II) comprises an adhesive composition crosslinkable by active radiant energy;

wherein the radiation-curable composition (I) comprises

- (A) at least one polymerizable compound comprising two or more copolymerizable, ethylenically unsaturated groups,
- (B) optionally, reactive diluents,
- (C) optionally, photoinitiator, and
- (D) optionally at least one coating additive.

Claim 29 relates to a mixture, comprising:

90 – 99.9% by weight of at least one radiation-curable composition (I); and

0.1 – 10% by weight of at least one pressure-sensitive adhesive (II);

wherein said mixture does not comprise an adhesive which requires an additional compound as a curing agent;

wherein the adhesive composition crosslinkable by active irradiation of energy has a molar weight of between 200 000 and 1 500 000 g/mol.

Further, the Examiner states that the acrylic polymer of Tsuchiko can be crosslinked using UV. In this context, she also refers to US 2001/0023264, para. 0029; US 2002/0037413, para. 0027 and US 6,844,034, col. 5, lines 22-37. (See pages 4 and 5 of the Office Action.) However, in the first additional reference, the acrylic polymers are reacted with methacryloyloxyethyl isocyanate to yield a reactive acrylic polymer. The second reference describes an acrylic polymer in combination with a UV absorber. Further, the third reference describes that an epoxy acrylate is added because it has reactive acrylic double bonds which can react with double bonds in inks that are UV curable. So in each case, specific UV curable double bonds have to be added in one form or another.

Further, contrary to the Examiners' statement, Yamamoto (US 2001/0023264) does not provide a disclosure or suggestion that all polyacrylates are crosslinkable by UV radiation. In fact in Yamamoto the phrases "acrylic polymer" vs. "reactive polymer" are used, see e.g. paragraph [0020], in which the phrase "acrylic polymer" denotes polymers or copolymers obtained by radical polymerization, see paragraphs [0019] and [0020].

However, a polymer which was obtained by a radical polymerization does not contain any reactive acrylic groups anymore, since these reactive groups reacted during the polymerization. Therefore, a polymer without radically polymerizable groups is obtained, which, of course, cannot further be crosslinked by UV exposure, as it lacks reactive groups.

In order to make these acrylic polymers reactive towards radicals (which are obtained by irradiation of photoinitiators with UV light) reactive groups have to be introduced into these polymers, as done in Example 2. In Example 2 an acrylic polymer bearing hydroxy groups in side chains is reacted with acryloyloxyethyl isocyanate, the isocyanate group reacts with the hydroxy group and, hence, a (radically polymerizable) acryloyl groups is coupled to the acrylic polymer which renders the polymer a “reactive polymer”, namely reactive towards radical polymerization, whereas the radicals are provided by the photo initiator upon UV exposure.

Thus, the Examiners’ statement (that every acrylic polymer is an acrylic adhesive which is crosslinkable by active radiant energy) with all due respect, is incorrect. In contrast, only those acrylic polymers which bear reactive groups, are crosslinkable in such a way.

Therefore, Yamamoto fails to support the rejection over Tsuchiko.

The acrylic polymers according to Kishioka et al. (US 2002(0037413) (US 2002(0037413) do not bear any reactive groups but need a crosslinker, as pointed out in paragraph [0025] and in the examples, in which polyisocyanates are used as crosslinkers.

Therefore, firstly Kishioka et al., do not disclose adhesives according to the claims of the present invention, which must not require additional compounds as curing agents, and secondly the adhesives according to Kishioka et al. are not crosslinkable by active radiant energy.

Therefore, Kishioka et al. fails to support the rejection over Tsuchiko.

The same is true for Touhsaent (US 6,844,034). The acrylic polymers described in col. 4, line 33 et seq. require a crosslinker, as pointed out in col. 4, line 58 et seq. and col. 5, line 1 et seq.

Therefore, firstly Touhsaent do not disclose adhesives according to the claims of the present invention, which must not require additional compounds as curing agents, and secondly the acrylic polymers according to Touhsaent are not crosslinkable by active radiant energy.

Therefore, Touhsaent fails to support the rejection over Tsuchiko.

The abstract of Tsuchiko (JP 63-0203811) discloses that a radiation-curable pressure sensitive adhesive composition (B) is obtained by mixing

- a thermoplastic resin (a), preferably an acrylic polymer,
- a compound (b) having one ethylenically unsaturated double bond,
- a compound (c) having at least two ethylenically unsaturated double bonds, and
- a photopolymerization initiator (d).

The adhesive (II) according to the present invention has to be crosslinkable by active radiant energy. A simple acrylic polymer as in Tsuchiko, e.g. a polyacrylate, does not have any polymerizable groups. Hence, the acrylic resin according to Tsuchiko cannot be crosslinkable by active radiant energy.

Further, an acrylic resin is not necessarily an adhesive, this is a question of the glass transition temperature Tg of this resin (see e.g. Claim 20). However, the abstract of Tsuchiko is silent about the Tg. Thus, there is no support for equating the thermoplastic resin (a) of Tsuchiko with the pressure sensitive adhesive (II) according to the invention. Therefore, the present invention is not anticipated by Tsuchiko.

Akiyama and Kamiya do not cure the defects of Tsuchiko. The combined references do not result in the present invention because Tsuchiko, Akiyama and Kamiya do not disclose

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or suggest each element of the claimed mixtures. Further, there is no motivation, suggestion or expectation of success for exchanging the components of Tsuchiko with other components.

Examiner Sellman is respectfully requested either to provide a translation of Tsuchiko, Akiyama and Kamiya or to withdraw her rejections.

Therefore, the rejections of the claims over Tsuchiko, Akiyama (JP 2002309185, abstract), Kamiya (JP 11228926, abstract), US 2001/0023264, US 2002/0037413 and US 6,844,034 should be withdrawn.

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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